ANALYSIS OF THE USE OF BLOCKCHAIN IN SHARIA TRANSACTIONS: A STUDY OF HALAL AND HARAM

Fadhila Sukur Indra[1], Maritza Putri Nabila[2], Windy Listari Efendi[3], Qonita Aidina Nafisah[4], Zalfa Nur Fadhilah[5]
[1]Universitas Darussalam Gontor
[2]Universitas Darussalam Gontor
[3]Universitas Darussalam Gontor
[4]Universitas Darussalam Gontor
[5]Universitas Darussalam Gontor
Email: maritza.poetr@gmail.com

Abstract

Blockchain is a form of digital technology innovation that can ensure data security so that today it is widely used, including by Islamic financial service providers. Blockchain enables the creation and distribution of cryptocurrencies, as well as assets with real value. Since blockchain is the underlying technology of cryptocurrencies, the two are often linked and considered as haram. In addition, blockchain offers advantages, such as a high level of transparency and security, a system that does not require a third party so as to reduce administrative costs, efficiency that can speed up the transaction process and others. From this consideration, the researcher tried to analyze the halal-haram status of blockchain. To conduct this research, researchers conducted a literature study through related articles, books and journals. Through this research it was found that blockchain has been applied in several financial transactions in countries such as Jordan, Saudi Arabia and Indonesia. The results showed that blockchain has been applied in various Islamic banks, both in transactions and the receipt of zakat and waqf. Blockchain is not a cryptocurrency and it is lawful as long as it is applied in transactions that fulfill sharia principles.

Keyword: *Blockchain, Transaction, Sharia*

A. INTRODUCTION

Blockchain technology is a decentralized system used to record and verify transactions in an open and transparent manner. Data stored in the blockchain cannot be changed without changing all previously stored data. This data can also be seen by all parties in the network so that this system has a high level of transparency and security. The blockchain system is run without the need for intermediaries such as banks so that it can reduce costs in transactions. Nowadays, blockchain is also used in some Islamic banking. For this reason, several studies have been conducted in a number of Muslim-majority countries to test the effectiveness of blockchain in the context of Islamic banking.

Research results in Saudi Arabia show that the use of blockchain can increase security and transparency in Islamic banking financial transactions through its cryptographic system, this is in line with the principles of Islamic finance which emphasize integrity and fairness in transactions (Hutagulung et al., 2024). Research results in Indonesia show that the use of blockchain technology can cut out intermediaries, reduce costs and increase speed and reach (Yudih et al., 2024). In research conducted in the distribution of humanitarian aid in Syrian refugee camps in Jordan, blockchain makes data transparent so that donors can find out the flow of aid funds and reduce costs that are usually channeled to third parties such as banks (Irmanti, 2020). Furthermore, research in Islamic banking in Iran shows that blockchain can improve data security, prevent fraud and speed up the settlement of financial transactions. Although blockchain has a lot of potential, it also faces several challenges, especially its implementation from the perspective of sharia principles. Financial transactions must comply with sharia principles, namely the validity of the contract, transparency and openness, justice, prohibition of usury, prohibition of gharar, prohibition of maysir, based on the principles of ukhuwah and maslahah. Because blockchain is a relatively new system, the regulations governing its use in the context of Islamic finance are still not optimal. The transparency offered by the blockchain system is also not always a positive value because there are some important customer information that must be protected. The security of the

blockchain system also remains vulnerable to attacks such as 51% attacks and potential hacking. Blockchain also invites controversy among the public regarding its halalness because it is often associated with cryptocurrencies that appear along with it. For this reason, researchers try to analyze the halal or haram status of blockchain and explain more about the advantages or disadvantages of blockchain.

B. LITERATURE REVIEW

Research results in Saudi Arabia show that the use of blockchain can increase security and transparency in Islamic banking financial transactions through its cryptographic system, this is in line with the principles of Islamic finance which emphasize integrity and fairness in transactions (Hutagulung et al., 2024). Research results in Indonesia show that the use of blockchain technology can cut out intermediaries, reduce costs and increase speed and reach (Yudih et al., 2024). In research conducted in the distribution of humanitarian aid in Syrian refugee camps in Jordan, blockchain makes data transparent so that donors can find out the flow of aid funds and reduce costs that are usually channeled to third parties such as banks (Irmanti, 2020). Furthermore, research in Islamic banking in Iran shows that blockchain can improve data security, prevent fraud and speed up the settlement of financial transactions. Blockchain is viewed positively because it is beneficial in facilitating the operations of Islamic banking. However, some figures still argue that blockchain is a technology that is haram to use because it has the potential to be a means for actions prohibited by Allah SWT.

C. METHOD

The research method used in this study is a literature review through articles, books, journals, and news regarding the blockchain system, its application in Islamic countries, as well as the pro and con opinions from several figures related to the use of blockchain technology in everyday life.

D. RESULTS AND DISCUSSION

Blockchain is a technology that enables the secure storage and transfer of data through a distributed network. Simply put, blockchain can be defined as a digital storage system that records transactions in interconnected blocks using cryptography, forming a chain of data that cannot be altered or forged. A blockchain consists of a series of blocks, each of which contains a verified record of transactions. Each block is connected to the previous block through a cryptographic hash, creating a secure and transparent chain. The blockchain process begins with the initiation of a transaction by a user. This transaction is then verified by a network of computers using a consensus algorithm. After validation, the transactions are then collected in new blocks and added to the pre-existing block chain. This process ensures all transactions are permanently recorded and accessible to all parties in the network.

Blockchain has several advantages such as high security, decentralization, immutability, transparency, consensus-based and the use of cryptographic methods in it. The cryptographic method that protects the blockchain serves to secure data and ensure that data can only be accessed by some parties who have the appropriate private key (Suryawijaya, 2023). The transactions contained therein are also encrypted and if an error occurs, the way to fix it is to add a new transaction that cancels the error. Meanwhile, the decentralization referred to here is an operation without central control, but each user in the same network can access the data contained therein. This prevents monopoly and increases fairness in the system. Users in the same network can also view transactions in the blockchain contained in the network, thus increasing transparency. Finally, the consensus process serves to verify transactions. Users will receive a new block when it has been verified that the transaction is valid. If a transaction is deemed invalid, then consensus is not reached and the transaction will be rejected (Bandaso et al., 2022).

Because of these advantages, blockchain is often used in modern financial systems. The cryptographic system used in blockchain can secure transaction data, reducing the risk of fraud and data theft. This can be ensured because the data cannot be changed because it can only be accessed by certain parties so that data integrity is guaranteed and can increase user confidence in making transactions. Transactions contained in the blockchain system are also always recorded properly and can be seen by all users, proving high transparency. Furthermore, this transparency also facilitates the implementation of audits and increases accountability in the financial system. Blockchain also no longer requires a third party as an intermediary so that it can save transaction costs.

Blockchain, which is the development of decentralized finance (DeFi) applications, provides wider access to users without the need for financial institutions. With blockchain, users can tokenize physical and digital assets such as stocks and property that increase liquidity and facilitate investment for individuals or institutions. Blockchain uses digital technology so that transactions can run more effectively, especially transactions between continents and provide easy access for users who previously faced difficulties in gaining access to transactions, such as those who live in remote areas or who do not have bank accounts.

Sharia transactions are economic activities based on Islamic principles, therefore things like interest (usury), excessive speculation (maisir) and the prohibition of investment in sectors that are considered haram such as liquor are strictly prohibited. In addition, there are Islamic principles that must be adhered to in conducting transactions, namely the principles of justice, partnership, peace, transparency, universality, non-usury and reasonable profit (UU RI, 1998). Usury is considered as interest charged to the debtor so that it burdens only one party. This is not in accordance with the principle of justice embraced by Islam, therefore Islam replaces usury with the practice of profit sharing (Hidayanto, 2008).

While maysir literally means getting something or any benefit easily without having to put in any effort. Maysir is prohibited in Islam because it contains elements of gambling, betting or risky games. In modern times, investment instruments offered to the public may contain elements of maysir, for example mutual funds (Pangestu, 2023). In practice, potential investors usually buy or sell stocks based on the expectation that the stock will go up or down. For this reason, there are now Islamic mutual funds that have different characteristics from conventional mutual funds as a form of effort to avoid practices that contain elements of maysir.

Furthermore, there is gharar which means consequences, disasters, dangers, risks and the like. Included in the gharar group are all types of economic transactions that involve elements of uncertainty, fraud or crime (Jamaludin & Syafrizal, 2020). Gharar is prohibited because it is detrimental and makes one or all of the parties involved unhappy. Even though at first the parties involved feel willing or agreeable, if at a later time one of the parties begins to realize the situation clearly, he may feel unhappy or wronged. Contemporary contracts that potentially contain gharar include insurance and online buying and selling (Hidayat, 2020).

Blockchain still invites question marks in the minds of the public regarding the halal or haram status of this system in transactions. The scholars also have different opinions, some of which consider that blockchain is halal as long as it is used for things that are in line with sharia. An example of blockchain utilization in the scope of sharia is in Islamic banking. Islamic banking faces several challenges in its operation, namely the existence of intermediaries in transactions, central fund management parties, relatively high transaction costs, centralized data-based management, multiple payments, etc. These challenges can be overcome by using a crowdfunding system that uses blockchain technology or smart contracts which can further detect fundraising fraud (Niforos et al., 2017) secure customer data and facilitate transactions without having to go through a central intermediary (Biancone et al., 2019). Its decentralized system helps to transact without the need for intermediaries, which has the potential for usury practices. The high level of transparency guarantees the security of customer data and reduces the potential for fraud.

Other scholars view blockchain transactions as haram because they are related to cryptocurrencies such as Bitcoin and Ethereum (Hidayatullah et al., 2023). This prohibition is based on the consideration that crypto digital currencies do not have a real physical form so that they can cause gharar in transactions. In addition, cryptocurrency is also dharar and contradicts Law No. 7 of 2019 and BI regulation No. 17 of 2015. A great Egyptian mufti named Sheikh Shawki Allam gave reasons for the prohibition of bitcoin because it is often used for illegal activities, is intangible and allows for money laundering and fraud. His opinion is supported by Magdy Ashour's statement that bitcoin is used to fund terrorists and he added that there are no rules that bind it, the pillars of Islamic contracts are not enforced in it so it is not allowed (Alaraby, 2017).

The next opinion comes from scholars who consider blockchain lawful because blockchain can be used as a basic technology for positive things and in accordance with sharia. Blockchain can still be run by applying Islamic law. Blockchain through smart contracts can be regulated so that it will not carry out transactions that have interest payments or contain maysir in them. Blockchain can also be utilized in the separation of personal assets or transaction funds which is an important point in sharia investment, where personal and non-personal assets must be clearly separated. The blockchain system offers the advantage of a high level of transparency by recording transactions that are permanent and can be accessed by all parties in the same block. Thanks to its high level of transparency, users can easily perform auditability because transactions are always recorded and can be easily monitored. Blockchain can also help in the process of sharing profits and risks with smart contracts so that the parties bound in the contract get equal justice (Yudha et al., 2020). In addition to smart contracts, blockchain is also utilized for collecting zakat, increasing waqf utilities, creating halal supply chains and applying blockchain in sukuk retail (Septianda et al., 2022).

The Indonesian Ulema Council (MUI) issued fatwa No. 117/ DSN-MUI/ II/ 2018 on Information Technology-Based Financing Services based on Sharia Principles consisting of eight parts (Rarawahyuni & Rismaya, 2022). This fatwa was issued as a guideline and is expected to increase public trust in financing services based on sharia principles offered by sharia fintech companies so as to attract public interest in switching to sharia fintech-based transactions. Blockchain from a sharia perspective has a legal status that depends on how this technology is utilized. Even so, investment in cryptocurrencies that use blockchain is not recommended because it has a high risk.

Based on the analysis explained earlier, we conclude that blockchain is not actually haram because it is a digital technology. Although blockchain is often associated with cryptocurrency and is considered haram by the Islamic financial community, it can be halal if it is used for the right things. Blockchain is basically a neutral technology, with various advantages such as transparency, high security, and low costs because it does not require intermediaries. These advantages of blockchain are in line with the principles of Islamic finance that uphold integrity, fairness, and prevent consumers from being harmed by fraud.

However, when it is used as the technology underlying cryptocurrencies or other transactions that contain elements prohibited by Islam such as usury, gharar and maysir, it becomes haram. Blockchain itself has been proven in several studies to have a positive impact and convenience in human life, especially in economic activities. The problem is that blockchain is classified as a new technology and does not yet have regulations that can regulate it effectively, causing doubts in the community. Even though blockchain has many advantages and offers many conveniences that are useful for the development of mankind. Such as a high level of transparency and security, a decentralized system and transaction cost savings. However, blockchain has been used several times for haram transactions such as gambling, investments that contain maysir and so on. For this reason, it is necessary to socialize to the public about the halal use of blockchain so that people can give confidence in it and can take advantage of blockchain features appropriately.

The government and other stakeholders need to set the right regulations regarding blockchain and provide clear boundaries so that blockchain can be implemented in various sectors that contribute to society, especially those that focus on sharia services, especially for Muslim-majority countries such as Indonesia.

We would like to thank all those who provided insights, resources, and feedback throughout the research process. Special thanks go to Universitas Darussalam Gontor for the support and facilities provided, as well as to the academics and experts who shared their knowledge on blockchain applications in Islamic finance. We also appreciate the valuable input from the journal reviewers and conference organizers who provided valuable comments and suggestions, which significantly improved the quality of this paper.

D. Conclusion

Blockchain offers great potential to enhance the efficiency, transparency, and security of Sharia transactions. With a decentralized system, blockchain eliminates the need for intermediaries, which not only reduces administrative costs but also minimizes the potential for usury practices. The immutable characteristics of blockchain and the use of cryptographic methods ensure data integrity is maintained, thereby increasing trust in financial transactions.

The benefits of blockchain are evident in its implementation in the Islamic banking sector in various countries such as Saudi Arabia, Indonesia, and Jordan. In Saudi Arabia, blockchain helps create transparency in the management of zakat and waqf. In Indonesia, this technology has been used to reduce operational costs and speed up transaction processes. Meanwhile, in Jordan, blockchain supports more efficient distribution of humanitarian aid, reducing the risk of fund misuse. Additionally, research in Iran shows that blockchain helps expedite the settlement of financial transactions while preventing fraud, which aligns with the principle of justice in Islam.

However, significant challenges remain. One of the main issues is the lack of specific and comprehensive regulations regarding the use of blockchain in Islamic finance. Although this system is transparent, data protection remains an important concern because there is customer information that needs to be kept confidential. The security of blockchain technology is also not entirely perfect, as it is still vulnerable to cyber attacks such as the 51% attack. In addition, blockchain is often associated with cryptocurrency, which invites controversy regarding its halal status. The element of gharar or uncertainty in digital assets like Bitcoin makes many scholars view it as haram.

To address this challenge, collaboration between the government, scholars, and industry players is needed to establish clear regulations and educate the public about the use of blockchain in accordance with Sharia principles. This technology can be considered halal if used in accordance with Islamic principles, such as avoiding maysir and riba, and adhering to the principles of justice, transparency, and benefit. The use of blockchain in the collection of zakat, recording of waqf, and the development of Sharia-compliant financial products such as sukuk can serve as positive examples that meet the needs of the Muslim community. With the right approach, blockchain has great potential to drive more inclusive and equitable growth in the sharia economy.

REFERENCES

Alaraby. "Digital Currency Bitcoin 'Forbidden in Islam', Rules Saudi Cleric." https://english.alaraby.co.uk/opinion/digital-currency-bitcoin-forbidden-islam-rules-saudi-cleric (Accessed Nov. 08, 2024)

Bandaso, T. I. et.al, "Blockchain Technology: Bagaimana Menghadapinya? -dalam Persepektif Akuntansi" Accounting Profession Journal (APAJI), Vol.4, No. 2. Juli 2022. https://doi.org/10.35593/apaji.v4i2.55. p. 105

Biancone, P., P. Secinaro, M. Kamal. "Crowdfunding and Fintech: Business Model Sharia Compliant" European Journal of Islamic Science, Vol. 1, No. 2. 2019. https://doi.org/10.13135/2421-2172/3260

Hidayanto, M. F., "Praktek Riba dan Kesenjangan Sosial" La Riba, Vol. 2, No. 2. 2008. p. 239 https://doi.org/10.20885/lariba.vol2.iss2.art6

Hidayat, E., "The Impact of Garar on The Validity of The Contemporar Muamalah Contract" Jurnal Syarikah, Vol. 6, No. 2, 2020. p. 120 https://doi.org/10.30997/jsei.v6i2.2147.

Hidayatullah, M. S. et al. "Peluang Ijtihad Hukum Penggunaan Uang Digital sebagai Aset dan Alat Transaksi di Indonesia" Tadayun: Jurnal Hukum Ekonomi Syariah, Vol. 4, No. 2. 2023. p. 204 https://doi.org/10.24239/tadayun.v4i2.213

Hutagulung, M. W. R. et al., "Tokenization of Dinar and Dirham: Potential and Implications in the Islamic Digital Financial System" JIFTECH: Journal of Islamic Financial Technology, Vol. 3, No. 1. p. 19 http://dx.doi.org/10.24952/jiftech.v3i1.12353

Irmanti, N. A. "Analisis Teknologi Blockchain sebagai Solusi Asimetri Kekuasaan Pemberian Bantuan Kemanusiaan Kamp Pengungsi Suriah di Yordania" Skripsi Universitas Gadjah Mada. 2020.

Jamaludin, J. and Reza Syafrizal, "Konsep Dasar Ekonomi Menurut Syariat Islam", MUAMALATUNA, Vol. 12, No. 1. 2020. p. 38-72 https://doi.org/10.37035/mua.v12i1.2859

Niforos, M. et al. "Block Chain: Opportunities for Private Enterprises in Emerging Market. In International Finance Corporation" Washington DC. 2017. Retrieved from https://openknowledge.worldbank.org/handle/10986/28692

Rarawahyuni, I. and Via Rismaya, "Analisis Peer to Peer Lending dan Crowdfunding pada Fintech Syariah ditinjau dari Fatwa DSN MUI dan Pendekatan Maqashid Syariah". Jurnal Maps (Manajemen Perbankan Syariah), Vol. 5, No. 2. 2022. p. 96-105 https://doi.org/10.32627/maps.v5i2.466.

Septianda, D. E. et.al, "Blockchain dalam Ekonomi Islam" Sibatik Journal: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, dan Pendidikan, Vol. 1, No. 11. 2022. p. 2634 https://doi.org/10.54443/sibatik.v1i11.407

Suryawijaya, T. W. E. "Memperkuat Keamanan Data melalui Teknologi Blockchain: Mengeksplorasi Implementasi Sukses dalam Transformasi Digital di Indonesia" JSKP: Jurnal Studi Kebijakan Publik, Vol. 2, No. 1. 2023. p. 59 https://doi.org/10.21787/jskp.2.2023.55-68

Undang-Undang Nomor, "Tahun 1998 tentang Perbankan", 10AD

Pangestu, D. A., "Penggunaan Teknologi Blockchain dalam Transaksi Keuangan Syari'ah". Skripsi Universitas Islam Indonesia. Yogyakarta, 2023. p. 27

Yudha, et.al. "Fintech Syariah: Teori dan Terapan". Scopindo Media Pustaka, 2020.

Yudih, D. et al., "Penggunaan Teknologi Blockchain dalam Perbankan Syariah" El-Ecosy: Jurnal Ekonomi dan Keaungan Islam,Vol. 4, No. 2. 2024. p. 147 http://dx.doi.org/10.35194/eeki.v4i2.4481